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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,580	09/23/2003	Tomohiro Sudoh	03575/LH	6796

1933 7590 12/23/2004

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EXAMINER

WOODS, ERIC V

ART UNIT	PAPER NUMBER
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2672

DATE MAILED: 12/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/669,580

Applicant(s)

SUDOH ET AL.

Examiner

Eric V Woods

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>20041214</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
3. Examiner respectfully suggests that applicant move the incorporation by reference statement from the last page of the application (p.25, last paragraph) to the first page, as this change would make it more apparent that applicant is indeed incorporating the foreign document via reference.

Drawings

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Figure 1, element 21, is not mentioned in the specification. This element must be identified in the specification. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the

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sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 1 and 3-5 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims are broad enough that they are technologically embodied, e.g. they merely manipulate abstract ideas (see MPEP 2106) and/or are anticipated by mental processes in a human being, thus are non-statutory under *In re Prater*.

In order to expedite a complete examination of the instant application the claims rejected under 35 U.S.C. 101 above are further rejected as set forth below in anticipation of applicant amending the claims to place them within the four categories of statutory subject matter.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by a mental process of a human being augmented with pencil and paper. A human being using a ruler and/or log or semi-log graphic paper could perform the recited tasks. Specifically, as coupled with the above 101 rejection (see MPEP 2106, which includes the appropriate discussion of why *In re Prater* doctrine applies herein), none of the claims has any limitation that a human being could not perform. For example, a human being computing data points and drawing them on log-log, semi-log, or regular graph paper would perform all the recited functions. As for the dependent claims, even claim 3 – the showing of an error box – could be performed by a human being drawing an error box on paper, and further a human being would be conscious that a logarithmic function would be undefined for non-positive (inclusive of zero) numbers, and thus would indicate that.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over PSpice (“OrCAD PSpice Quick Reference” OrCAD™, Inc.)(‘Orcad’) in view of Spiegel (Jan Van der Spiegel. “How to Get Started with PSpice for Beginners”)(‘Spiegel’) –

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backed by Official Notice. **Examiner is taking Official Notice. [Claim 6 is a computer program implementing the method of claim 1; therefore any rejections valid on claim 1 is equally valid on claim 6 without further comment. It would have been obvious to use software to perform the plotting tasks in any case, as computers have been used for similar tasks for the last 30+ years (whether as paper printouts or on a computer display (e.g. CRT, monochrome terminal, etc.))

As to claim 1,

A logarithmic graph plotting apparatus comprising:

- A range setting unit for setting x- and y-coordinate ranges; (Spiegel page 3, section d, states that "Probe provides ...a range of choices to manipulate the graphics, such as range of the axes, labels, etc." and the program *prima facie* graphs two-dimensionally. Further, Orcad shows page 5, Log X axis and Log Y axis buttons, proving x and y coordinate ranges, thus directly proving that such data is graphed, if it can be manipulated by adjusting the layout of the axes.)
- A graph plotting unit for plotting a graph in a coordinate system with the x- and y-coordinate ranges set by the range setting unit; (Spiegel page 3, section d, "...PSpice Probe is a postprocessor to graph the output." Orcad shows page 5, Log X axis and Log Y axis buttons, proving x and y coordinate ranges, thus directly proving that such data is graphed, if it can be manipulated by adjusting the layout of the axes.)
- A logarithmic scale marking unit for marking x- and/or y-axes with logarithmic scales in the x- and y-coordinate ranges set by the range setting unit; and (Orcad page 5,

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description of Probe toolbar buttons, "Log X axis" and "Log Y axis" as options to switch the views between linear and log views)

-A logarithmic graph plotting unit for plotting a logarithmic graph depending upon the logarithmic scales marked on the x- and/or y-coordinate axes by the logarithmic scale marking means. (Spiegel clearly states that PSpice Probe graphs data, and the toolbar functionality disclosed by Orcad shows that the graphical views are toggled back and forth between linear and log views). [Examiner takes Official Notice, having used this software from 1999-2004 while an undergraduate and afterwards, working as an engineer. The OrCAD™ PSpice software program performs and/or possesses all the above features / limitations.]

Reference Spiegel clearly discloses that the PSpice Probe software graphs data and can be used to manipulate how the data is shown and can set the data ranges shown. The quick reference guide from the software's manufacturer – reference Orcad - clearly shows that the software can toggle back and forth between linear and log views. Examiner takes Official Notice that the software can perform the recited functions – as of 1999, the software was available and was used by examiner (versions 8.0, 9.1 was available by late 2000). It would have been obvious to combine Orcad and Spiegel, as Spiegel is a tutorial on how to use the software described in Orcad, and examiner takes Official Notice to back up these positions.

As to claim 2,

The logarithmic graph plotting apparatus according to claim 1, wherein the range setting unit comprises a unit for displaying a range setting picture on which items for setting the

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x- and y-coordinate ranges, respectively, and items for setting the x- and/or y-axes as corresponding x- and/or y-logarithmic axes, respectively are indicated selectable; and (firstly, Spiegel teaches that the Probe program can be used to set the range, and Orcad specifically shows in the toolbar button descriptions that there are tabs in the Axis Settings dialog box, which is identical to the "range setting picture" specified by applicant (e.g. applicant's Figs. 2A and 2B), where range and the log/linear options for both axes can be selected, as specified in the captions next to the "Log X Axis" and "Log Y Axis" buttons)

The logarithmic scale marking unit marks the x- and/or y-axes with logarithmic scales in the x- and/or y-coordinate ranges set by the corresponding range setting items when the items for setting the x- and/or y-logarithmic axes are selected on the range setting picture. (The two buttons shown on the Probe toolbar disclosed in Orcad are on the graph / picture when it is displayed. Clicking on those buttons switches the graph between log and linear view for the axis in question. The buttons are toggle buttons, which perform the exactly same functionality as the check boxes shown by applicant (applicant's Figs. 2A-2B, and 6A-6C). The axes of the graph are appropriately scaled (linear or log) based on how the log/linear buttons are toggled, as specified by applicant. Examiner takes Official Notice that such functionality occurs as recited above, having used the software to perform those tasks.)

Reference Spiegel does not explicitly teach the limitations of log scale plots; the manufacturer's quick reference Guide Orcad discloses all of them as recited above. Examiner takes Official Notice that the software can perform the recited functions – as

of 1999, the software was available and was used by examiner (versions 8.0, 9.1 was available by late 2000). It would have been obvious to combine Orcad and Spiegel, as Spiegel is a tutorial on how to use the software described in Orcad, and examiner takes Official Notice to back up these positions.

As to claim 3,

The logarithmic graph plotting apparatus according to claim 1, comprising a unit for indicating error when the items for setting the x- and/or y-axes as the corresponding x- and/or y-logarithmic axes are selected and the set x- and/or y-coordinate ranges includes a value other than a positive value.

Neither reference Spiegel nor reference Orcad expressly teaches these limitations. However, it would have been obvious that since a log function by definition does not have a definite value for zero (the function evaluates to infinity or is a division by zero) and is undefined for negative numbers, any attempt to use a log axis plot for a data set with negative numbers would cause an error. It is a fundamental of the software engineering and programming arts that when a program experiences an error, it should display an error dialog box explaining, as much as possible, what the error was and what caused it, for diagnostic purposes and such that the user can avoid making similar errors again. Therefore, it would have been obvious to show an error box stating that the functionality of a log axis was not valid over a data set with negative numbers, or at the very least to merely show an error message, as shown by applicant (Fig. 2X).

Examiner takes Official Notice that the program in fact does this. Any attempt to perform log functionality on a data set with a value of zero or negative numbers in the x

data set / range results in the program giving an error message and not proceeding any further. Motivation / combination is taken from the parent claim and incorporated herein by reference without further comment.

As to claim 5,

The logarithmic graph plotting apparatus according to claim 1, wherein the items for setting the x- and/or y-axes as the corresponding logarithmic axes comprise check boxes to be checked off.

Reference Spiegel does not explicitly teach this limitation. However, given that reference Orcad clearly shows that toggle buttons that only had two states – like the recited check boxes – that have the recited functionality (switching between linear and log axes), it would have been obvious to modify the software to use check boxes instead of toggle buttons, as each have the same functionality and Spice uses check boxes in the X-axis and Y-axis tabs under the Axis Settings dialog box (Examiner takes Official Notice). Again, it is a fundamental of the software art that GUI input widgets (e.g. toggle buttons, check boxes, etc.) can be switched out with each other, particularly in Java GUI-based WYSWIG (what-you-see-is-what-you-get) IDE (integrated development environments) and web-layout tools that have been available since before 2000, and the Java language also allows the specification of Radio-button and Checkbox primitives (“CORE Web programming”, see attached reference. The noted Java 1.1 package was released in 2000). It would have been obvious to combine Orcad and Spiegel, as Spiegel is a tutorial on how to use the software described in Orcad, and examiner takes Official Notice to back up these positions, and it would have

been obvious to so modify the program of Orcad to use check boxes, as it is a fundamental of the art (see attached CORE java reference as one example of this).

11. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Spiegel in view of Orcad as applied to claim 1 above, and further in view of Leach (Leach, Marshall. "Loudspeaker Voice-Coil Inductance Losses: Circuit Models, Parameter Estimation, and Effect on Frequency Response.")

As to claim 4,

The logarithmic graph plotting apparatus according to claim 1 wherein the logarithmic scales include a plurality of straight lines extending from the corresponding scales on the x- and/or y-logarithmic axes.

References Orcad and Spiegel do not expressly teach this limitation. Reference Leach shows on Figure 7 (pg. 447) very clearly a log plot of data and in Fig. 9, log-log data plots, which shows multiple straight lines extending from the corresponding scales on the x- and y-axes as recited by applicant (for all 10 numbers on the scale), and states on page 446, second column, toward the bottom, that a statistics program called MathCAD created the shown graphs. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the tutorial of Spiegel with the software documentation of Orcad and the statistics of Leach, as Spiegel and Leach both include sections that teach how to use (Spiegel) or use (Leach pages 447-448, Spice model and examples given) the program documented in Orcad to generate data plots (Spiegel) using software that is known to generate log-log plots (Orcad), and the program taught in Leach shows data presented as per the above

recited claim – both programs – PSpice Probe and MathCAD – serve as post-processors and display tools for data sets. Furthermore, the very buttons used to toggle the axes on and off shown in OrCAD have lines on them as recited above in applicant's claim. Again, Leach is used as an example of scientific / engineering paper that utilizes both Spice and statistics / mathematics processing programs to illustrate that it was well-known at the time of filing of this application to use such tools and that such functionality was trivially well-known in the art. Finally, examiner takes Official Notice that the program shows the lines as recited by applicant in the above claim.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric V Woods whose telephone number is 703-305-0263. The examiner can normally be reached on M-F 7:30-5:00 alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on 703-305-4713. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

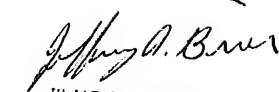
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Eric Woods

December 14, 2004



JEFFERY D. BRINER
PRIMARY EXAMINER